WHAT IS CLAIMED IS:

1. A communication stack, comprising:

a first layer for generating encoded audio data, wherein the audio data comprises compressed feature vectors representative of speech;

a second layer for generating a data stream comprising the encoded audio data;

a third layer for generating a transmission control data stream, wherein the transmission control data stream comprises meta information for coding scheme notifications; and

a fourth layer for transporting each of the data streams.

2. The communication stack of claim 1, wherein the first layer is adapted to reconstruct an audio waveform from encoded audio data.

3. The communication stack of claim 1, wherein the first layer comprises one of a plurality of encoding schemes and the encoded audio data generated by the first layer comprises one of a plurality of corresponding encoding types.

4. The communication stack of claim 3, wherein the coding schemes comprise (1) a speech recognition enabled coding scheme and (2) a speech reconstruction and speech recognition enabled coding scheme.

5. The communication stack of claim 1, wherein the meta information for coding scheme notifications comprises meta information for one of selecting, changing, and selecting and changing, the encoding type of the encoded audio data

6. The communication stack of claim 1, further comprising a fifth layer for generating distributed control data, wherein the distributed control data is implemented for coordinating distributed conversational functions.

7. The communication stack of claim 6, wherein the distributed control data comprises one of (1) a pointer to a data file (2) a data file, (2) an I/O (input/output) event notification, (3) a specification of a format of an output result, (4) an address specifying where to send an output result, (5) a field identifier for XML tags, (6) field identifiers for an active form, and a combination thereof.

8. The communication stack of claim 1, wherein the encoded audio data comprises a file format that enables transmission of segments of speech and decompression of the segments of speech in a random order.

9. The communication stack of claim 8, wherein the file format of the encoded audio data comprises a file header comprising meta information that specifies a coding scheme, file size, and coding arguments associated with the encoded audio data.

10. The communication stack of claim 9, wherein the coding arguments comprise one of sampling frequency, feature vector type, feature vector dimension, language type, frame duration, and a combination thereof.

11. The communication stack of claim 8, wherein the file format comprises a speech segment header followed by a speech segment, wherein the speech segment comprises a plurality of blocks, wherein each block comprises a predefined number of frames of encoded speech data.

12. The communication stack of claim 8, wherein the file format comprises at least one of a plurality of segment types and corresponding segment headers, wherein a given segment header comprises meta information that specifies a segment type and a length of the segment.

13. The communication stack of claim 12, wherein the segment types comprise a speech segment, a silence segment, an end-of-stream segment, and ancillary data segments.

14. The communication stack of claim 13, wherein error recovery information is specified by an ancillary data segment and corresponding data segment header.

15. The communication stack of claim 1, wherein the second layer employs an extension of RTP (real time protocol) to wrap the encoded audio data file.

16. The communication stack of claim 1, wherein the third layer employs an extension of RTCP (real time control protocol) to wrap the transmission control data.

17. The communication stack of claim 6, wherein the fifth layer employs and extension of RTCP to wrap the distributed control data.

18. The communication stack of claim 6, wherein the fifth layer employs an extension of RTSP (real time streaming protocol) to wrap the distributed control data.

19. The communication stack of claim 1, further comprising a distributed API layer comprising one of JSAPI (java speech API), RPC (remote procedure call), RMI (remote method invocation) and a combination thereof.

20. The communication stack of claim 1, wherein the communication stack is implemented in a Voice over IP network.

21. The communication stack of claim 1, wherein the fourth layer comprises one of UDP (user datagram protocol), TCP (transmission control protocol), and both.

22. The communication stack of claim 1, wherein the communication stack is tangibly embodied as program instructions on a program storage device.

23. A communication stack for use in a real-time distributed conversational network, comprising:

a first layer for generating encoded audio data;

a second layer for wrapping encoded audio data in a real-time encoded audio data stream; and

a third layer for wrapping control messages in a real-time control data stream for real-time control of conversational distributed functions over the network.

24. The communication stack of claim 23, wherein the communication stack comprises an extension of RTP (Real Time Protocol).

25. The communication stack of claim 24, wherein meta information associated with the real-time encoded audio stream is added as an extension of a header of an RTP packet, wherein the RTP header extension comprises one field indicating an encoding type of the encoded audio data in the RTP packet and a second field comprising header information associated with a file of the encoded audio data.

26. The communication stack of claim 24, wherein meta information associated with the real-time control data stream is added as an extension of a header of an RTCP (Real

Time Control Protocol) packet, wherein the RTCP header extension comprises a first field indicating a type of conversational distributed protocol and a second field comprising a corresponding control message.

27. The communication stack of claim 26, wherein the communication stack is implemented in a distributed multi-modal browser framework, and wherein the real-time control data streams comprises one of browser I/O events, a pointer to an argument data file, a pointer to a remote engine, and a combination thereof.

28. The communication stack of claim 23, further comprising a fourth layer for generating a real-time transmission control data stream, wherein the real-time transmission control data stream comprises meta information for providing coding scheme notifications.

29. The communication stack of claim 23, wherein the communication stack is implemented in a Voice Over IP network.

30. The communication stack of claim 23, wherein the control data stream comprises and extension of RTSP (real-time streaming protocol).

31. The communication stack of claim 23, wherein the communication stack is tangibly embodied as program instructions on a program storage device.

32. A method for providing real-time distributed conversational computing, comprising the steps of:

generating encoded audio data;

wrapping encoded audio data in a real-time encoded audio data stream; and

wrapping control messages in a real-time control data stream for real-time control of conversational distributed functions over the network.